

Establishing a Professional Course Ecosystem to Facilitate Outstanding Individual Achievement

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Abstract

In the face of diverse societal demands for professional talents and the personalized requirements of students' individual growth, how can professional teachers leverage their strengths and specialties to timely integrate their experiences and achievements in technological innovation into education? This becomes a crucial issue that must be addressed for the high-quality development of higher education. To this end, the report proposes strategies and measures for establishing a professional course ecosystem. Taking the example of the construction of the course system for instrumentation at Beihang University, the report details the process of refining the core course "Sensor Technology and Applications" to provide students with a rich and high-quality teaching resource practice through the organized progression of the "course chain," "course tree," and "course forest" within the instrumentation course ecosystem. It also briefly introduces the stage achievements in assisting students' individual growth and achieving outstanding individual achievement.



Shangchun Fan is a professor of Instrument Science and Technology, which is a national first-class key discipline at Beihang University, and a doctoral supervisor. He is a recipient of the National "Ten Thousand Talents Program" Teaching Master, Baogang Outstanding Teacher Special Award, Special Allowance from the State Council, and serves as the director at the Key Laboratory of Quantum Sensing Technology under the Ministry of Industry and Information Technology. He is also the leader of the Ministry of Education's "Advanced Sensing Technology in Aerospace" innovation team, director of the school's Teaching Guidance Committee, deputy director of the Academic Committee, and a core member of the national university Huang Danian-style teacher team.

The course he is responsible for, "Sensor Technology and Applications," is a national-level boutique course, the first batch of national-level boutique resource-sharing courses, the first batch of national-level first-class undergraduate courses (offline), and the first batch of National-level Ideological and Political Education Exemplary Course.

As the first principal investigator, he has won one National Technical Invention Award and one National Scientific and Technological Progress Award. As the second principal investigator, he has won one National Teaching Achievement Award.